REMARKS

By this amendment, Applicants have amended claim 8 to recite that the at least one electrically conductive contact plate cannot be drawn out of the insulating frame without damaging the insulating frame. Claim 46 has been amended to clarify that the at least one electrically conductive contact plate has opposed first and second major surfaces and opposed longitudinally extending narrow sides joining the opposed first and second major surfaces, and that the longitudinal struts of the insulating frame completely and tightly surround most of the length of the longitudinally extending narrow sides of the at least one electrically conductive contact plate such that the at least one electrically conductive contact plate cannot be drawn out of the insulating frame without damaging the insulating frame. Applicants have canceled claims 39 and 43-45 and added new claims 47-50 to the application.

The foregoing amendments place the application in condition for allowance for the reasons set forth hereinafter or, at least, in better form for consideration on appeal. Therefore, entry of this amendment under 37 C.F.R. 1.116 is requested.

Claims 4, 8 and 10-12 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,990,748 to Starck. Applicants traverse this rejection and request reconsideration thereof for the reasons set forth in applicants' previous responses and the following reasons.

The present invention relates to a device for receiving PTC elements in a heating device. The device includes an insulating frame having spaced recesses

in which the PTC elements can be held and an electrically conductive contact plate held in the insulating frame and on which the PTC elements provided in the recesses of the insulating frame can be placed. According to the present invention, the frame has spaced longitudinal struts extending in a longitudinal direction of the frame and longitudinal spaced cross bars extending perpendicular to the longitudinal struts and linking the longitudinal struts. The struts and cross bars define and surround the spaced recesses. The longitudinal struts of the insulating frame completely and tightly surround most of the length of the longitudinally extending side edges of the contact plate such that the contact plate cannot be drawn out of the insulating frame without damaging the insulating frame.

The patent to Starck discloses an apparatus for heating gases, particularly air, with a heating unit having a mounting part, at least one PTC component, at least one insulating frame part surrounding the latter, at least one contact plate and at least one insulating support. The PTC-component is surrounded by the frame part being inserted in the mounting part and on at least one flank side rests a contact plate and is covered bay an insulating support.

The insulating frame 11 of Starck is produced separately from the electrically conductive contact plate 22. The contact plate is inserted between the frame determined by longitudinal and traverse legs 13, 16 and bracket 21 as shown in Figure 2. Frame 11 and contact plate 22 are held by a rivet 24. As the contact plate 22 is therefore, on one side, held on the frame by rivet 24 and, on the other side, is held more or less loosely by the brackets 21, the document

does not disclose that the contact plate cannot be drawn out of the insulating frame without damaging the insulating frame. As frame and contact plate according to Starck are produced separately from each other and therefore just added or assembled together to form a heating element, the contact plate of Starck definitely can be drawn out of the frame without damaging the frame 11. The combination of a contact plate and an insulating frame, the longitudinal struts of which completely and tightly surround most of the length of the longitudinally extending side edges of the contact plate such that the contact plate cannot be drawn out of the insulating frame without damaging the insulating frame is clearly not disclosed in Starck.

Therefore, claims 4, 8 and 10-12 are patentable over Starck.

Claims 13, 31 and 45 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Starck in view of U.S. Patent No. 6,373,705 to Koelle et al. Applicants traverse this rejection and request reconsideration thereof.

The Examiner has cited the Koelle et al. patent as allegedly disclosing cross-bars that are inwardly directed studs for the positive retention of the PTC elements and a polymer ceramic insulating member used to transfer heat away from a heating component. However, clearly nothing in Koelle et al. would have remedied the basic deficiencies noted above with respect to Starck.

Applicants submit a person of ordinary skill in the art would not look to the teachings of Koelle, as Koelle describes a totally different purpose. The patent of Koelle first of all clearly does not disclose the feature of holding the contact plate in such a way that it cannot be drawn out of the insulating frame without

damaging said frame. Moreover, Koelle does not disclose any frame at all. Rather, Koelle shows a semiconductor module which has a carrier substrate having an electrically insulating layer, a metal layer in which conductors are formed via structuring and which is arranged on the upper side of the insulating layer. Even if this construction could be used in a similar way as the heating element in the present invention does, the production process of both products is completely different. In the present invention, the contact plate is molded inside a frame which itself is insulating, where the process of "molding" is totally different from the process of the structuring method used in Koelle. Koelle discloses that first an insulating part is prepared after the different layers of conducting or semiconducting materials are applied via structuring, where the metal itself is deposited layer by layer. The semiconducting PTC-element is deposited also via the structuring method, which itself is a difficult and costly process.

In contrast, the present invention shows a process which is not only different, but opposite to that described in Koelle. For example, according to the present invention, a prepared contact plate may be coated by molding with a polymer ceramic inside a molding shape or profile in order to form a frame surrounding the contact plate. This is clearly not shown in Koelle.

Even if the Examiner deems the semiconducting PTC-Element of Koelle to resemble the contact plate of the present invention, the semiconducting PTC-Element of Koelle does not have the same shape, size and purpose of the contact plate of the present invention. Indeed heating can be done by both

embodiments, but the heating element of Koelle does not reach the heating powers given by the present one, as such a thin layer can not be energized as much. It would simply burn through and be destroyed. The heating element of the type of the present invention includes a robust contact plate. Therefore, the one of ordinary skill in the art would not have any reason to look to Koelle to modify Starck.

Therefore, the presently claimed invention is patentable over the proposed combination of Starck and Koelle.

Applicants submit claims 47-50 are also patentable over Starck, alone or in view of Koelle.

In view of the foregoing amendments and remarks, entry of this amendment and favorable reconsideration and allowance of all the claims now in the application are requested.

Please charge any shortage in the fees due in connection with the filing of this paper, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 321.43756X00), and please credit any excess fees to such deposit account.

Respectfully submitted,

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